

Infrared Light Emitting Diode

1. GENERAL DESCRIPTION

AT205-J-FTY is high intensity diode, GaAlAs infrared light emitting diode, mounted in clear epoxy package. It emits spectrally narrow band of radiation peaking at 940nm.

2. FEATURES

- High reliability.
- High radiant intensity.
- Low forward voltage.
- Lead Free product, in compliance with RoHS.

3. APPLICATIONS:

- Free air transmission system.
- Optoelectronic switch
- Floppy disk drive
- Infrared applied system
- Smoke detector

4. ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
Power Dissipation	P_d	150	mW
Peak forward current	I_{FP}	1	A
Continuous Forward Current	I_F	100	mA
Reverse voltage	V_R	5	V
Operating temperature range	T_{opr}	-25 to +85	°C
Storage temperature range	T_{stg}	-40 to +85	°C
Lead soldering temperature	T_{sol}	260°C for 5 sec Max (2mm from Body)	°C

Notes:

I_{FP} conditions: Pulse Width $\leq 100 \mu s$, Duty $\leq 1\%$.

5. ELECTRICAL OPTICAL CHARACTERISTICS AT Ta=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Radiant Intensity	I_e	25	30	40	mw/sr	$I_F=20mA$
Peak emission wavelength	λ_{peak}	--	940	--	nm	$I_F=20mA$
Spectral line half-width	$\Delta\lambda$	--	45	--	nm	$I_F=20mA$
Forward voltage	V_F	1.1	1.2	1.4	V	$I_F=20mA$
		--	1.4	1.6	V	$I_F=100mA$ Pulse Width $\leq 100 \mu s$, Duty $\leq 1\%$
		--	2.6	4	V	$I_F=1A$ Pulse Width $\leq 100 \mu s$, Duty $\leq 1\%$.
Reverse current	I_R	--	--	10	μA	$V_R=5V$
Viewing angle	$\theta_{1/2}$	--	± 10	--	Deg	$I_F=20mA$

6. TYPICAL ELECTRICAL/OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

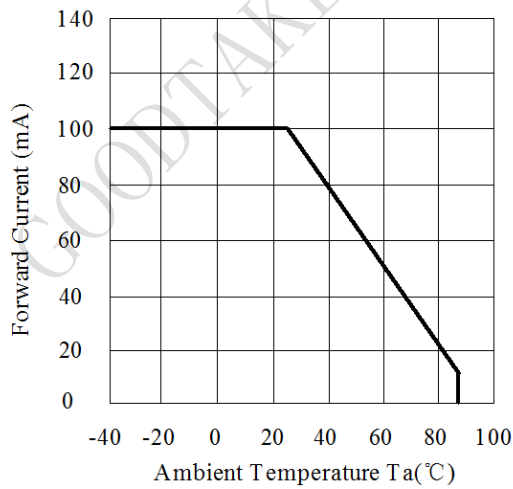


Fig.1 Forward Current Vs. Ambient Temperature

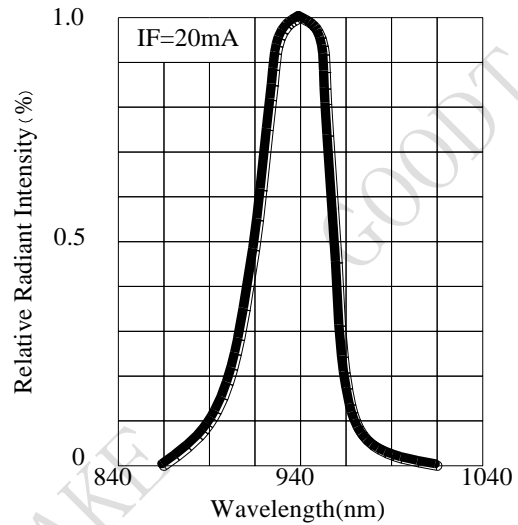


Fig.2 Spectral Distribution

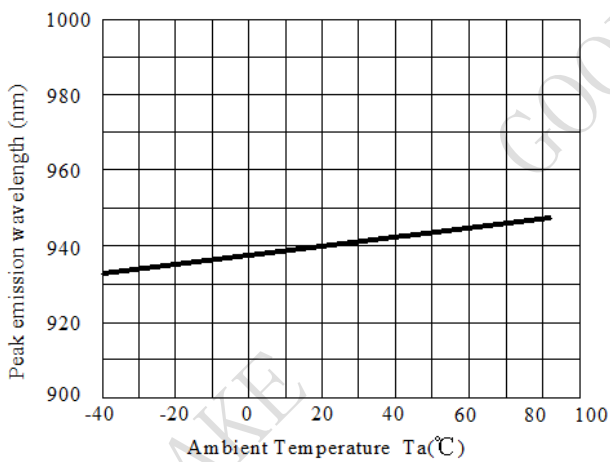


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

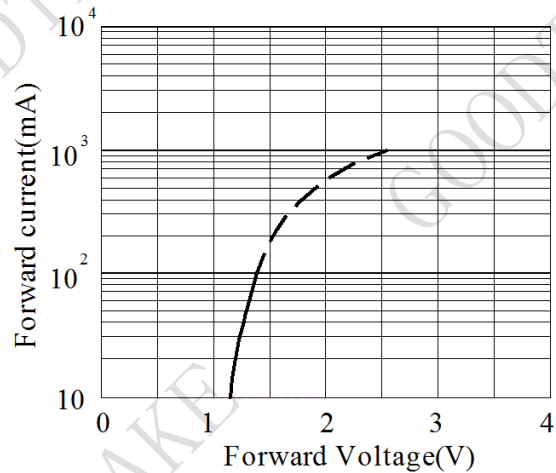


Fig.4 Forward Current Vs. Forward Voltage

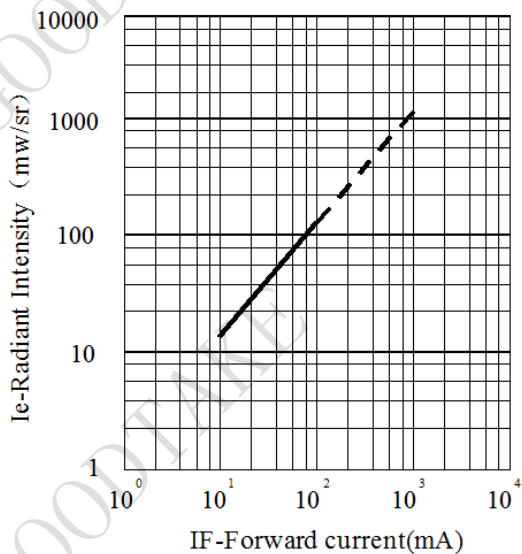


Fig.5 Forward Current Vs Radiant Intensity

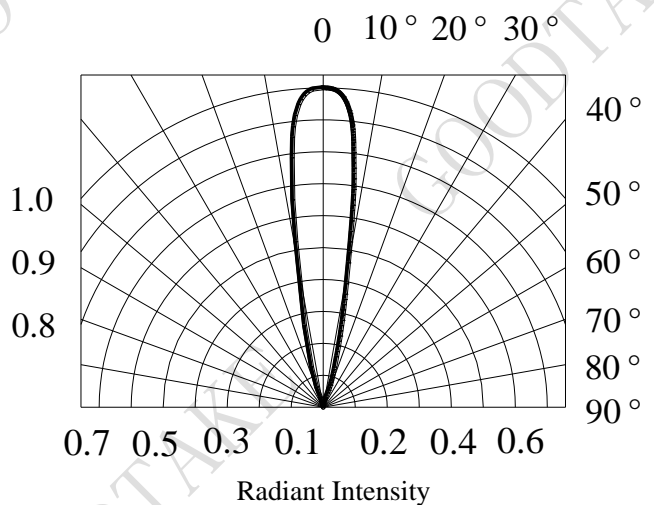
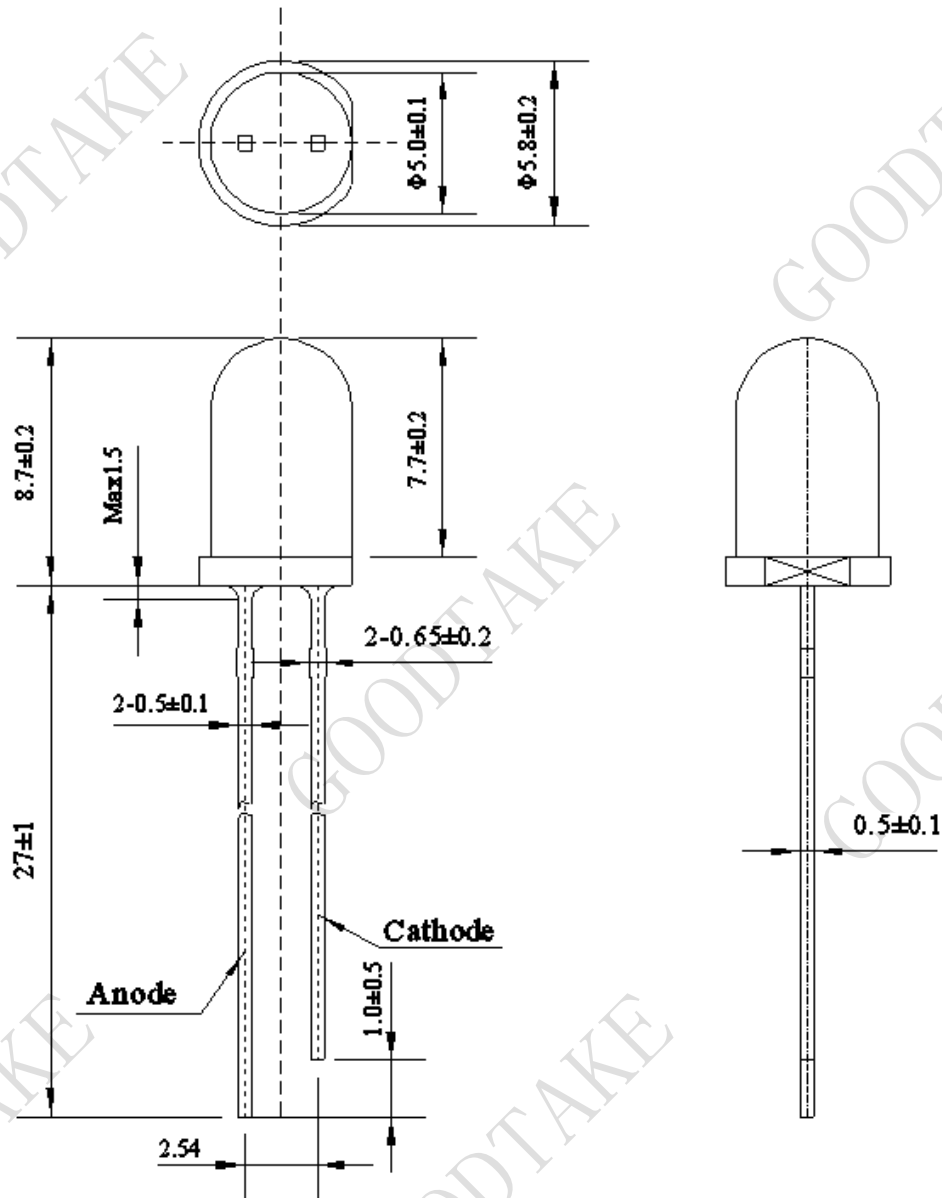


Fig.6 Angle Vs Radiant Intensity

7. PACKAGE DIMENSIONS:



Notes

1. All dimensions are in millimeters.
2. Tolerance is ± 0.25 unless otherwise noted.

8. SOLDERING INSTRUCTION

1. Machine flow soldering – Solder temperature 260 ± 5 °C for 5 seconds, max. 2 times.
2. Manual Soldering –with condition:
 - 2.1 Temperature controlled soldering iron with tip temperature not more than 350 degree °C ;
 - 2.2 Finished soldering within 3 seconds;
 - 2.3 Device inserted into PC board of 1.6mm thickness, apply the heated solder tip between the copper pad and wire terminal;
 - 2.4 Do not apply any force to the resin body during soldering and no pre-heat required.
 - 2.5 Solvent cleaning not recommended before cool down of the board assembly.